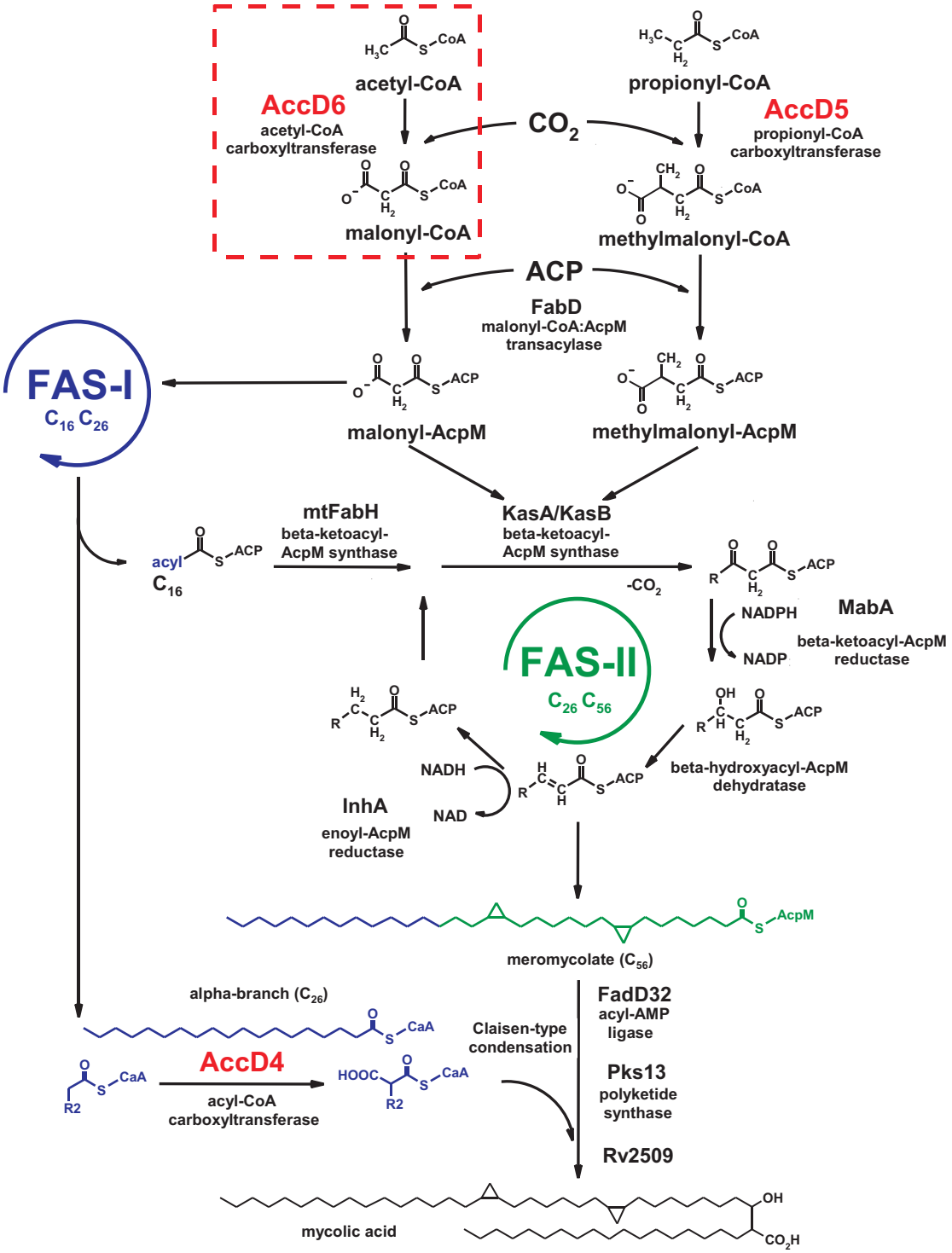

Fig. S1 Fatty acid/mycolic acid biosynthesis in mycobacteria. FAS-I catalyzes the *de novo* synthesis of short fatty acyl primers C16 and C26. The C16 acyl-CoA product acts as a substrate for the synthesis of meromycolic acid by FAS-II, whereas the C26 fatty acid constitutes the α-branch of the final mycolic acid. FAS-II comprises four enzymes which act repeatedly to produce full-length meromycolate chain (C56). The relative contribution of FAS-I and FAS-II activities in fatty acid/mycolic acid chain synthesis is represented in blue and green respectively. Three carboxyltransferases believed to play a role in mycolic acid biosynthesis are indicated in red. AccD6 of *M. tuberculosis* possesses acetyl-CoA carboxyltransferase activity *in vitro*. It catalyses the synthesis of malonyl-CoA - the initial and universal reaction (marked with red frame) providing substrate for the synthesis of mycolic and other fatty acids that is incorporated into the growing acyl chain during the repetitive cycle of FAS-I/II reactions. AccD5 is able to carboxylate propionyl-CoA to produce methylmalonyl-CoA which is utilized by FAS-II system for the synthesis of branched fatty acyl chains. AccD4 is the only one mycobacterial carboxyltransferase able to accommodate larger acyl chains in its active site and it carboxylates C26-S-CoA chain of α-branch released by FAS-I. The carboxylated α-branch is subsequently condensated by Pks13 with meromycolate converted previously to meromycolyl-AMP by FadD32. After final reduction, synthesis of mature mycolic acid is completed.